

MONTHLY NOTICES

OF THE

ROYAL ASTRONOMICAL SOCIETY.

VOL. LXIX.

JUNE 11, 1909.

No. 8

SIR DAVID GILL, K.C.B., F.R.S., PRESIDENT, in the Chair.

Alec Joscelyne Bamford, B.A., Assistant Astronomer to the
Ceylon Government, The Observatory, Colombo, Ceylon ;

Rev. Basil Staunton Batty, M.A., Bolsover Vicarage, Chesterfield,
and Oxford and Cambridge Club, Pall Mall, S.W. ;

George Frederick Dodwell, B.A., The Observatory, Adelaide,
South Australia ; and

Rev. William Francis Rigge, S.J., Professor of Physics, and
Director of the Observatory, Creighton University, Omaha,
Nebraska, U.S.A.,

were balloted for and duly elected Fellows of the Society.

Dr. W. de Sitter, Professor of Astronomy in the University of
Leyden ; and

Professor Karl Schwarzschild, Director of the Observatory,
Göttingen,

were balloted for and duly elected Associates of the Society.

The following candidates were proposed for election as Fellows
of the Society, the names of the proposers from personal knowledge
being appended :—

Thomas William Bush, Gentleman, Lullenden Farm, East
Grinstead, Surrey (proposed by H. H. Turner) ;

John Walton Capstick, Fellow of Trinity College, Cambridge
(proposed by H. F. Newall) ;

William Bennett Barton Freeland, J.P., Registrar of the Diocese,

- Cathedral Registry Office, Chichester (proposed by F. J. W. Crowe);
 R. W. Giblin, Director of the Royal Survey Department of Siam, Bangkok, Siam (proposed by Sir David Gill);
 J. W. Short, Astronomical Photographer, The Observatory, Sydney, New South Wales, Australia (proposed by F. K. McClean); and
 William H. Tapp, Lieut., Queen's Bays, Hounslow, Middlesex (proposed by E. A. Reeves).

Sixty-eight presents were announced as having been received since the last meeting, including, amongst others:—

F. Ristenpart, *Fehlerverzeichnis zu den Sternatalogen des 18 und 19 Jahrhunderts*. Presented by the Editor of the *Astronomische Nachrichten*.—H. Gylden (the late), *Traité analytique des orbites absolues des huit planètes principales*. Tome 2. Presented by the R. Acad. of Sciences, Stockholm.—J. Bainbridge, *Canicularia* [with Gravius and Ulug Beig]. 8vo. Oxford, 1648. Presented by W. H. Wesley.

On the nature of the Hydrogen Flocculi on the Sun. By G. E. Hale, Assoc. R.A.S., For. Mem. R.S.

[From the Royal Society's Provisional Report of their Meeting,
 June 17, 1909.]

Photographs of the *H α* line in the spectrum of the solar disc, made on Mount Wilson with high dispersion, were shown on the screen. The line appears as follows:—(1) a broad dark line, differing greatly in intensity and width in different regions of the Sun. Except in eruptive or rapidly changing phenomena, the differences in width are not very marked; (2) within the boundaries of the dark line a narrow single or multiple bright line is photographed in many parts of the Sun. Sometimes the appearance resembles that of the calcium lines *K₂* and *K₃*—i.e. the bright line lying on its dark background is divided into two components by a central dark line. In other regions the bright line is divided into a larger number of components, varying in width and separation.

The images of dark hydrogen flocculi, on spectroheliograph plates taken with camera slit about equal in width to *H α* , appear to be due, in the main, to local increase in the intensity of the dark line. In some parts of the Sun, particularly those where the line is distorted, variations in the width of the line may also play an important part.

The increased intensity of the dark line is probably the result of increased absorption. Slides were shown to illustrate the fact